## Distichlis spicata - Hordeum jubatum - Puccinellia nuttalliana - Suaeda calceoliformis Herbaceous Vegetation

COMMON NAME Saltgrass - Foxtail Barley - Nuttall's Alkali Grass - Sea-blite Herbaceous Vegetation
SYNONYM Northern Great Plains Saltgrass Saline Meadow
PHYSIOGNOMIC CLASS Herbaceous Vegetation (V)
PHYSIOGNOMIC SUBCLASS Perennial graminoid vegetation (V.A)
PHYSIOGNOMIC GROUP Temperate or subpolar grassland (V.A.5)
PHYSIOGNOMIC SUBGROUP Natural/Semi-natural (V.A.5.N)
FORMATION Temporarily flooded temperate or subpolar grassland (V.A.5.N.j)
ALLIANCE DISTICHLIS SPICATA - (HORDEUM JUBATUM) TEMPORARILY FLOODED HERBACEOUS ALLIANCE
CLASSIFICATION CONFIDENCE LEVEL 3
USFWS WETLAND SYSTEM Terrestrial

RANGE

***Lacreek National Wildlife Refuge***

These units occupy flat, alkaline, silt loam soils near the Refuge pools on sites that are poorly to moderately well-drained.

***Globally***

This inland saltgrass wet meadow is found in the northeastern and north-central Great Plains and tallgrass prairie regions of the United States and adjacent Canada, ranging from Minnesota and the Dakotas to Manitoba.

ENVIRONMENTAL DESCRIPTION

***Lacreek National Wildlife Refuge***

These units occupy flat, alkaline, silt loam soils near the Refuge pools on sites that are poorly to moderately well-drained. The fluctuating water table is probably within the rooting zone of the vegetation for most of the growing season.

***Globally***

This community is found on terraces, floodplains, swales and other low sites where drainage is poor. The soils are moderately to strongly saline, fine-textured, and moderately deep to deep (Redmann 1972, USFS 1992). Hirsch (1985) found this community on a variety of soil textures, including sandy clays, clay loam, sandy loams, and sandy clay loams. Periodic flooding is common, and this may result in soil deposition and consequent poor soil development (Hanson and Whitman 1938). The water table is often high, and salt encrustations may be present on the surface (Hirsch 1985).

MOST ABUNDANT SPECIES

***Lacreek National Wildlife Refuge***

| Stratum | Species |
|---|---|
| Herbaceous | *Distichlis spicata, Hordeum jubatum, Puccinellia nuttalliana, Suaeda calceoliformis* |

***Globally***

| Stratum | Species |
|---|---|
| Herbaceous | *Distichlis spicata, Hordeum jubatum, Puccinellia nuttalliana, Suaeda calceoliformis* |

CHARACTERISTIC SPECIES

***Lacreek National Wildlife Refuge***

*Distichlis spicata, Hordeum jubatum*

***Globally***

*Distichlis spicata, Hordeum jubatum*

OTHER NOTABLE SPECIES

VEGETATION DESCRIPTION

***Lacreek National Wildlife Refuge***

In many cases, this association is fairly monotypic and dominated by inland saltgrass (*Distichlis spicata*). Total foliar cover is usually less than 50% and vegetation height is often less than 15 cm. The most common secondary species is Kentucky bluegrass. Small depressions often contain nearly pure stands of foxtail barley (*Hordeum jubatum*).

***Globally***

This community has low species diversity and is dominated by salt-tolerant graminoids. Total vegetation cover is sparse to moderate, and bare ground is common (Hanson and Whitman 1938, Redmann 1972). Graminoids dominate the stand. The dominant species are *Distichlis spicata* and *Hordeum jubatu*m. Other common species include *Muhlenbergia asperifolia, Muhlenbergia richardsonis, Puccinellia nuttalliana, Suaeda calceoliformi*s, and *Spartina gracili*s. *Pascopyrum smithii* and *Bouteloua gracilis* can be common on relatively dry inclusions within this community (Hirsch 1985), and *Elymus lanceolatus* may be found on the upland border (Hanson and Whitman 1938). *Carex hallii, Carex praegracili*s, and *Sporobolus compositus (= Sporobolus asper)* can also be found. *Andropogon gerardii, Schizachyrium scoparium, Panicum virgatu*m, and other tall grasses can be a component of these wet meadows. Common forbs include *Ambrosia psilostachya (= Ambrosia coronopifolia), Symphyotrichum ericoides (= Aster ericoides), Chenopodium leptophyllum, Grindelia squarrosa, Melilotus officinalis, Plantago elongata, Plantago eriopoda* (western Minnesota), *Plantago patagonic*a, and *Salicornia rubr*a. Shrubs are very rare. *Artemisia frigida, Atriplex nuttalli*i, and *Sarcobatus vermiculatus* are the only shrubs that have been noted from the western part of the type's range (Hirsch 1985, USFS 1992, R. Dana pers. comm. 1999).

CONSERVATION RANK *G2G3.* This type is fairly restricted in distribution and occurs in relatively localized salinedepressions. Many sites have been heavily grazed (R. Dana pers. comm. 1999).

DATABASE CODE CEGL002273

SIMILAR ASSOCIATIONS
*Hordeum jubatum* Herbaceous Vegetation

COMMENTS
***Lacreek National Wildlife Refuge***
Extensive areas naturally dominated by switchgrass are rare in the Great Plains and this type is unique in that regard. The swales and drainages which the type dominates are sometimes saturated throughout much of the growing season, or in the case of the sandhills, the stands are subirrigated.

***Globally***
The relationship between this community and *Hordeum jubatum* Herbaceous Vegetation (CEGL001798) is unclear. Both communities usually contain *Distichlis spicata* and *Hordeum jubatu*m. *Hordeum* may be more common on heavily grazed sites (R. Dana pers. comm. 1999). The presence of *Puccinellia nuttalliana* or *Suaeda calceoliformis* may be distinguishing factors. They appear to be more characteristic of strongly saline areas while *Hordeum jubatum* can dominate on less saline sites (Redmann 1972). Classification problems may arise on intermediate sites when *Hordeum jubatum* is the dominant species and *Distichlis spicata, Puccinellia nuttalliana*, and *Suaeda calceoliformis* are present in minor amounts. Compare type with *Sporobolus airoides* Northern Plains Herbaceous Vegetation (CEGL002274), found in western North Dakota.

REFERENCES
Greenall, J. A. 1995. Draft element descriptions for natural communities of southern Manitoba (prairie and parkland regions). Manitoba Conservation Data Centre, Winnipeg. 17 pp.

Hanson, H. C., and W. Whitman. 1938. Characteristics of major grassland types in western North Dakota. Ecological Monographs 8:58-114.

Hirsch, K. J. 1985. Habitat type classification of grasslands and shrublands of southwestern North Dakota. Ph.D. thesis. North Dakota State University, Fargo.

Johnston, B. C. 1987. Plant associations of Region Two: Potential plant communities of Wyoming, South Dakota, Nebraska, Colorado, and Kansas. R2-ECOL-87-2. USDA Forest Service, Rocky Mountain Region. Lakewood, CO. 429 pp.

Redmann, R. E. 1972. Plant communities and soils of an eastern North Dakota prairie. Bulletin of the Torrey Botanical Club 99(2):65-76.

U.S. Forest Service. 1992. Draft habitat types of the Little Missouri National Grasslands. Medora and McKenzie ranger districts, Custer National Forest. Dickinson, ND.

**Note:**
This association is found in two different map classes:
1) Foxtail Barley Herbaceous Vegetation
2) Saltgrass Herbaceous Vegetation Alliance